

REMARKS

Claims 1-8 and 15-29 have been cancelled in response to the restriction requirement. Claims 9-14 & 31-37 are currently pending in the present application. Reexamination and reconsideration of the application are respectfully requested.

REJECTION OF CLAIM 35 UNDER 35 U.S.C. 112

Claim 35 is rejected under 35 U.S.C. 112, first paragraph, for the reasons set forth on pages 2-3 of the Action. Specifically, the Action is requesting a portion of the specification to support the first signal and second signal as claimed. FIG. 4 and the associated description of the same on page 11, lines 5 to 20 of the specification provide support for the claimed limitations. In view of the foregoing, it is respectfully submitted that limitation set forth in claim 35 and noted by the Action is fully supported by the specification. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 112 be withdrawn.

REJECTION OF CLAIMS 30-37 UNDER 35 U.S.C. 102(e)

Claims 30-37 are rejected under 35 U.S.C. 102(e) for the reasons set forth on pages 3-5 of the Action. Specifically, claims 30-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Terashima et al (U.S. Pat. No. 6,538,762, hereinafter referred to as "Terashima" or "the Terashima reference").

The rejections under 35 U.S.C. 102(e) are respectfully traversed, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth herein below.

FIG. 2, elements 5, 13, and 15; and Column 4, lines 1-27, of the Terashima reference are cited as teaching the cable as claimed. It is respectfully submitted that the

Terashima reference fails to teach or suggest, inter alia, a cable that includes a printer controller, as claimed in claim 30.

The examiner interprets elements 5, 13 and 15 as a single cable. However, this interpretation is against the clear teaching of Terashima that the control circuit 5 is external to any cable. First, Terashima states that the control circuit 5 of FIG. 2 is "an external circuit." (see col. 4, lines 29-31) Second, element 13, which is shown in FIG. 2 as separate from circuit 5, is defined as a "parallel interface cable 13." (see col. 4, lines 33-34) Third, element 15, which is shown in FIG. 2 as separate from circuit 5, is defined as a "parallel interface cable 15." (see col. 4, lines 34-35)

Terashima does not fairly teach that control circuit 5 is internal to or part of any cable. Otherwise, Terashima would have made it clear by showing that circuit 5 is part of the cables 13 and 15 in FIG. 2 or describing that circuit 5 is included in either of the cables 13, 15 in the specification. Consequently, it is a strained interpretation to equate the elements 5, 13 and 15 of Terashima with the single cable as claimed.

Furthermore, the dependent claims 31-37 also add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited references.

In view of the foregoing, it is respectfully submitted that the Terashima reference fails to teach or suggest the cable as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 102(e) be withdrawn.

REJECTION OF CLAIMS 30-37 UNDER 35 U.S.C. 102(e)

Claims 30-37 are rejected under 35 U.S.C. 102(e) for the reasons set forth on pages 5-7 of the Action. Specifically, claims 30-37 are rejected under 35 U.S.C. 102(e)

as being anticipated by Lin (U.S. Pat. No. 6,753,903, hereinafter referred to as "Lin" or "the Lin reference").

The rejections under 35 U.S.C. 102(c) are respectfully traversed, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth herein below.

FIG. 1, elements 1, 4, and 5, and Column 1, lines 45-67, of the Lin reference are cited as teaching the cable as claimed. It is respectfully submitted that the Lin reference fails to teach or suggest, inter alia, a cable that includes a printer controller, as claimed in claim 30.

The examiner interprets elements 1, 4 and 5 as a single cable. However, this interpretation is against the clear teaching of Lin that the adaptor 1 is external to any cable. First, Lin states that the adaptor 1 of FIG. 1 is separate from USB cables 4 and 5. For example, Lin explains that adaptor 1 is connected to digital still camera (DSC) 2 by a first USB cable 4. (see col. 2, lines 53-55) Second, Lin clearly explains that element 14 (a port of adaptor 1) and element 2 (the digital still camera) of FIG. 1 are connected by USB cable 4, which is clearly separate from and external to the adaptor 1. (see col. 4, lines 57-60) Third, Lin clearly explains that element 15 (another port of adaptor 1) and element 3 (the USB printer) of FIG. 1 are connected by another USB cable 5, which is clearly separate from and external to the adaptor 1. (see col. 4, lines 60-64) Accordingly, as shown in FIG. 1 and supported by the description, elements 1, 4, and 5 are separate and distinct components or elements and should not be "interpreted" as a single cable as the Action has done.

Lin does not fairly teach that adaptor 1 is internal to or part of any cable 4, 5. Otherwise, Lin would have made it clear by showing that adaptor 1 is part of the cables 4

or 5 in FIG. 1 or by describing that adaptor 1 is included in either of the cables 4, 5 in the specification. Consequently, it is a strained interpretation to equate the elements 1, 4 and 5 of Lin with the single cable as claimed.

Furthermore, the dependent claims 31-37 also add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited references.

In view of the foregoing, it is respectfully submitted that the Lin reference fails to teach or suggest the cable as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 102(e) be withdrawn.

REJECTION OF CLAIMS 9-14 UNDER 35 U.S.C. 103(a)

Claims 9-14 are rejected under 35 U.S.C. 103(a) for the reasons set forth on pages 7-12 of the Action. Specifically, claims 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terashima et al. (U.S. Pat. No. 6,538,762, hereinafter referred to as "Terashima" or "the Terashima reference") in view of Hirst et al (U.S. Pat. No. 5,930,553, hereinafter referred to as "Hirst" or "the Hirst reference"). The Action states that Terashima teaches the claimed invention except for a dynamic loading program. Hirst is then cited for teaching the dynamic loading program. This rejection is respectfully traversed.

As advanced previously, Terashima fails to teach or suggest one or more limitations as set forth by independent claim 30. Moreover, it is respectfully submitted that the combination of Terashima and Hirst fails to teach or suggest the invention as claimed for the same reasons as advanced previously. Stated differently, Hirst does not cure the deficiencies of Terashima.

Specifically, Terashima, whether alone or in combination with Hirst, fails to teach or suggest, "determining whether the printer controller program is compatible with the print engine and the printer controller," as claimed. For example, the cited portions (col. 2, lines 32-54, col. 3, lines 34-56, col. 4, lines 52-62 and col. 6, lines 12-15) have been reviewed carefully, but no teaching has been found regarding the limitation as noted above. Perhaps, the next Action can cite a specific portion of Hirst that is relied upon for the above-noted limitation.

As advanced in a previous response, printer cables are familiar to computer users and include a plurality of electrodes (e.g., a parallel cable or USB cable) for communicating data to be printed from a computer (e.g., a PC or lap top) to the printer. As described in the Background section of the application, prior art laser printers are configured to include the printer controller in the printer enclosure with the print engine as shown in Hirst. Consequently, the cited references do not fairly teach or suggest configuring a cable so that it includes a printer controller as claimed.

It is a tenuous argument to suggest that one skilled in the art would arrive at the claimed invention by selecting the printer controller 13 from Hirst and combining it with the circuit 5 of Terashima, where in fact Hirst clearly teaches disposing the printer controller 13 in the printer enclosure 11, and Terashima teaches disposing the circuit 5 outside of cables 13 and 15. Furthermore, it is respectfully submitted that one skilled in the art would not have arrived at the claimed invention without the improper use of hindsight gleaned from the teachings of the present invention.

As argued previously, the image forming device 10 of the Hirst reference includes a housing 11 that houses electronic components, such as a print engine 12, a printer controller 13, a formatter 14, etc. (see FIG. 1, and col. 4, lines 24-37). Specifically, the

Hirst reference teaches that the print engine 12 and printer controller 13 are disposed in the housing 11 of the imaging forming device (see, col. 4, lines 24-37). FIG. 1 of Hirst also clearly indicates or shows that the printer controller 13 is disposed in the printer housing 11 with the print engine, which as described in the background section of the current application, is the configuration of prior art laser printers.

Moreover, one novel aspect of the invention as claimed is to remove the printer controller from the printer enclosure and to instead dispose the printer controller in a printer cable. By so doing, several significant disadvantages of the prior art printer configuration are overcome, and efficiencies and advantages are achieved by the claimed invention. The lack of implementation by others in the marketplace indicates that the invention as claimed is not obvious. Furthermore, the claimed invention goes against and is contrary to what the prior art teaches and what the printer manufacturers are pursuing. For example, the industry is integrating the printer controller with the print engine or other components (e.g., laser controller) inside the printer, as described in the Background on pages 2 and 3. Also, the recognition by the present inventors of a previously unrecognized problem (i.e., inability by user to upgrade printer controller) militates in favor of patentability and against obviousness.

Also, as dependent claims, claims 9-14 also add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited references.

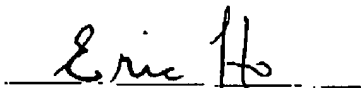
In view of the foregoing, it is respectfully submitted that the Terashima reference, whether alone or in combination with the Hirst reference, fails to teach or suggest the cable and method of replacing the printer controller as claimed. Accordingly, it is

respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

Conclusion

For all the reasons advanced above, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the pending claims are requested, and allowance is earnestly solicited at an early date. The Examiner is invited to telephone the undersigned if the Examiner has any suggestions, thoughts or comments, which might expedite the prosecution of this case.

Respectfully submitted,



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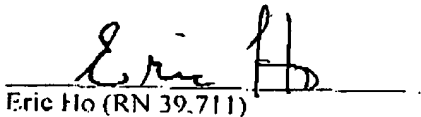
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(Date)